



State of Idaho
DEPARTMENT OF WATER RESOURCES

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November 21, 1994

Mr. Doug Rosenkrance
Watermaster, District 34
Mackay, Idaho

Post-it® Fax Note 7671		Date	# of pages
To	Doug Rosenkrance	From	Scott King
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Dear Doug:

Steve King contacted me last week regarding the use of energy information for calculating his diversion volume. He was concerned because he sometimes operates his system at reduced flow (only two lines on, normally operated with four).

I told him we could make some adjustments based on his knowledge of the system's operation. He claimed the system is operated with only two lines on about 20 percent of the time, and close to capacity about 80 percent of the time. Billy measured 875 gpm, so I assumed that reduced flow was half of this (438 gpm). His average flow rate is therefore:

$$\begin{aligned} Q &= (0.80 \times 875) + (0.20 \times 438) \\ &= 788 \text{ gpm} \end{aligned}$$

We can adjust his total volume diverted using the same method, which in this case equates to 90 percent of the volume that would have been calculated without this adjustment.

Do you agree with Steve's claims and my method of estimating his use. If so, I'll send him a note outlining my calculations above.

Steve asked if we could make provisions for owners keeping a record of the system operation for cases like this. I feel it is a good idea, and it will probably be something we are going to implement in Basin 36 next year. It would be best to test the system at the different operating conditions, which wouldn't be difficult if the operator could shut down a couple lines (or make whatever changes are necessary) so that another flow and power measurement could be made. The flow meter would already be mounted, so the additional time would be fairly minimal. Water users would then keep a (daily?) record of system operation. This process would only be necessary on systems that experience a large variance in flow rate for a significant amount of time due to changes in system operation.

Please think about this and let me know what you think.

Sincerely,

Scott King